

REMARKS

Claims 1-22 are pending in this application. Claim 1 stands rejected. Applicant wishes to thank the Examiner for the indication of allowance of claims 2-19. By this Amendment, claim 1 has been amended and new claims 20-22 have been added. No new matter has been added by this amendment. The amendments made to the claim do not alter the scope of the claim, nor have these amendments been made to define over the prior art. Rather, the amendments to the claim have been made for cosmetic reasons to improve the form thereof. In light of the amendments and remarks set forth below, Applicant respectfully submits that each of the pending claims is in immediate condition for allowance.

Applicant has amended the specification at page 22, line 16 through page 23, line 1. The amendment has been made to correct typographical errors. Support for these changes can be found in the description at page 7, line 25, through page 8, line 5 and page 22, line 13.

Claim 1 stands rejected under 35 U.S.C. § 102(e) as being anticipated by Jarvinen. Applicant respectfully traverses this rejection. Among the limitations of independent claim 1 not present in the cited reference is that the excitation signal has a large energy fluctuation.

As recited in the present specification at pages 15-18, excitation is directly calculated and the temporal fluctuation of the energy in the excitation signal is directly reduced. Excitation is calculated by multiplying signal and gain. If the gain is calculated without considering the excitation or other input signals, the temporal fluctuation in the excitation signal must be reduced so that the

temporal fluctuation in the signal gain product is minimized. In this case, the system is adapted to reduce the temporal fluctuation of the signal over time when the excitation signal has a large energy fluctuation.

As disclosed, the energy fluctuation of excitation is smooth by excitation signal normalization circuit 2510, smoothing circuit 1320, and excitation signal restoring circuit 2610. Since the energy fluctuation of excitation applied to the synthesis filter is smooth, the method of the present invention as explicitly recited in claim 1 is effective to signals having a relatively large energy fluctuation.

In contrast, in Jarvinen, a white noise input signal having a relatively small energy fluctuation is used. The method of Jarvinen is effective only for signals having relatively small fluctuations in energy. Jarvinen's method is not effective for a general signal having a large fluctuation in energy because such signals include the signal in the noise.

As such, Applicant submits that claim 1 is allowable over the Jarvinen reference.

New claims 20-22 have been added to the application. New claims 21 and 22 recite changing amplitude of the excitation signal using both the calculated norm and the smooth norm. Likewise, apparatus claim 22 recites that the amplitude is changed based on a relationship between the calculated norm and the smooth norm.

In Jarvinen, the excitation signal is smoothed using only an averaged gain g_{mean} . This feature is described at column 8, lines 40-47 and in Figure 2b of Jarvinen. The norm, which is not subjected to averaging operation, is not used.

According to the present claims, the excitation is smoothed using both of the averaged norm and the norm before averaging. The norm is calculated from the excitation which is the object of the smoothing. Therefore, the present invention is different from Jarvinen in the manner of smoothing operation of the excitation. The method and apparatus of the present claims is effective even when the signal has a relatively large energy fluctuation.

Applicant has responded to all of the rejections and objections recited in the Office Action. Reconsideration and a Notice of Allowance for all of the pending claims are therefore respectfully requested.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

If the Examiner believes an interview would be of assistance, the Examiner is welcome to contact the undersigned at the number listed below.

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Respectfully submitted,

By

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